

## IN THE CLAIMS

Please delete claim 29 and amend claims 20-27 as follows:

### 1-18 (cancelled)

**19. (previously presented)** A ferrohydrostatic separation method comprising the steps of:

providing a ferrofluid;

controlling the density of the ferrofluid to a substantially constant value by means of a vertically orientated magnetic field generated by a C-dipole, an open dipole (O-dipole), or split pair electromagnet or permanent magnet;

introducing materials of different densities into the ferrofluid; and

separately recovering materials which sink and float in the ferrofluid.

**20. (currently amended)** The method according to claim 19, wherein the vertically orientated magnetic field is generated by a C-dipole and a required vertically orientated magnetic field pattern is achieved by ~~appropriate design of the~~ means of magnetizing coils on upper and lower legs of the C-dipole.

**21. (currently amended)** The method according to claim 19, wherein the vertically orientated magnetic field is generated by a C-dipole and a required vertically orientated magnetic field pattern is achieved by controlling the relative polarity of electrical current flowing through ~~[[the]]~~ magnetizing coils on upper and lower legs of the C-dipole.

**22. (currently amended)** The method according to claim 19 wherein the vertically orientated magnetic field is generated by a C-dipole ~~and a required vertically orientated magnetic field pattern is achieved by appropriate shaping of the C-dipole tips~~ having tips which face one another, the tips being shaped to produce a required vertically orientated magnetic field pattern.

**23. (currently amended)** The method according to claim 19 wherein the vertically orientated magnetic field is generated by a split pair electromagnet and a required vertically orientated magnetic field pattern is achieved by ~~appropriate design of the~~ means of magnetizing coils on upper and lower members of the split pair.

**24. (currently amended)** The method according to claim 19 wherein the vertically orientated magnetic field is generated by a split pair electromagnet and a required vertically orientated

magnetic field pattern is achieved by controlling the relative polarity of electrical current flowing through ~~[[the]]~~ magnetizing coils on upper and lower members of the split pair.

**25. (currently amended)** The method according to claim 19 wherein the vertically orientated magnetic field is generated by a split pair electromagnet ~~and a required vertically orientated magnetic field pattern is achieved by appropriate shaping of the tips of upper and lower members of the split pair~~ having upper and lower members having tips facing one another, the tips being shaped to produce a required vertically oriented magnetic field pattern.

**26. (currently amended)** The method according to claim 19 wherein the vertically orientated magnetic field is generated by an O-dipole electromagnet ~~[[and]]~~ having a steel core shaped to produce a required vertically orientated magnetic field pattern ~~is achieved by appropriate shaping of the steel core of the O-dipole electromagnet.~~

**27. (currently amended)** The method according to claim 19 wherein the vertically orientated magnetic field is generated by an O-dipole electromagnet and a required vertically orientated magnetic field pattern is achieved by ~~appropriate design of the~~ means of a magnetizing coil of the electromagnet.

**28. (previously presented)** The method according to claim 19 wherein a required vertically orientated magnetic field pattern is achieved with the provision of a substantially constant magnetic field gradient.

**29. (withdrawn)** A ferrohydrostatic separation apparatus for separating materials having different densities, the apparatus including a separation chamber for accommodating a ferrofluid into which the materials are introduced, and a C-dipole, O-dipole or split pair magnet adjacent the chamber for generating a magnetic field to control the apparent density of the ferrofluid to a substantially constant value.